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EXAMINER

HUHN, RICHARD A

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/551,630	Applicant(s) POPP ET AL.	
	Examiner RICHARD A. HUHN	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20, 23-26 and 29-37 is/are pending in the application.
- 4a) Of the above claim(s) 11-20, 23-26 and 34-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 29-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>27 July 2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of claims 1-10 and 29-22 in the reply filed on 4 May 2009 is acknowledged.
2. Applicant has argued that the cited groups of claims do not lack unity of invention because the common technical feature is a nonobvious contribution over WO '237. Specifically, Applicant argues (first paragraph of page 10 of Remarks) that WO '237 fails to suggest a mixture of esters with the presently claimed number of alkylene oxide units.
3. As to the number of alkylene oxide units: WO '237 teaches that the number of alkylene oxide units is related to the water-absorbing capacity of the polymer (see columns 2-3 and 7 of Table 1 on page 17). Therefore, a person of ordinary skill would be motivated to select an appropriate length of alkylene oxide units to achieve desired water-absorbing capacity.
4. As to the mixture: It is noted that the instant invention is drawn to the same purpose as WO '237 (namely, hydrogels). It is well settled that it is prima facie obvious to combine two ingredients, each of which is targeted by the prior art to be useful for the same purpose. In re Lindner 457 F.2d 506, 509, 173 USPQ 356, 359 (CCPA 1972). Also, case law holds that "it is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them

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flows logically from their having been individually taught in the prior art.” In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

5. Applicant further argues (second paragraph of page 10 of Remarks) that the International Search Report indicated that all the claims are novel and have an inventive step. However, the International Search Report is not a determination by the US Patent and Trademark Office, and is therefore not given weight for determinations of unity of invention.

6. Applicant further argues (third and fourth paragraphs of page 10 of Remarks) that no reason has been provided as to why the cited groups of claims lack of unity of invention. However, as was set forth in paragraphs 2 and 4 of the Office action mailed on 6 April 2009, and as is set forth above, the common technical feature does not constitute a nonobvious contribution over the prior art. Therefore, the common technical feature does not amount to a special technical feature. Because the cited groups of claims lack a special technical feature, there is a lack of unity among the cited groups of claims.

7. Applicant further argues (first full paragraph of page 11 of Remarks) that the cited groups of inventions have unity of invention because they are drawn to related inventions. However, as set forth above in paragraph 6, the determination of lack of unity of invention is based upon the lack of a special technical feature, and is not based upon the inventions’ general or conceptual similarity to one another.

8. Application further argues (second full paragraph on page 11 of Remarks) that no burden has been demonstrated, and cites MPEP 803 to this effect. However, this

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portion of the MPEP is drawn to national applications, and not to national stage (371) applications. No serious burden need be shown to demonstrate a lack of unity of invention, or to require restriction between inventions, in a 371 application.

9. The requirement is still deemed proper and is therefore made FINAL. Claims 11-20, 23-26, and 34-37 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected inventions, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 4 May 2009.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 6 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

12. Claim 6 recites the limitation that n1, n2, and n3 are each 9, in which case the sum of n1, n2, and n3 is 27. However, base claim 1 requires that the sum of n1, n2, and n2 be at least 28. Therefore, claim 6 is indefinite because it fails to fall within the scope of base claim 1.

13. Claim 7 recites the limitation that m1, m2, and m3 are each 1 or are each 5, in which cases the sum of m1, m2, and m3 are 3 or 15, respectively. However, base claim

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1 requires that the sum of m_1 , m_2 , and m_3 be at least 5 and at most 13. Therefore, claim 7 is indefinite because it fails to fall within the scope of base claim 1.

Double Patenting

14. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

15. Obviousness-type double patenting rejection #1:

16. Claims 1-10 and 29-33 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 4-7, 10-16, 18, 21-23, 26-27, 29-30, and 32-34 of copending Application No. 10/516702. Although the conflicting claims are not identical, they are not patentably distinct from each other. US App ‘702 claims glycerol tri(meth)acrylates which are structurally similar to the presently

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recited trimethylolpropane tri(meth)acrylates (see claim 7, for example). The compounds of US App '702 differ from the presently recited compounds in that the present compounds have an ethyl group on the triol moiety, and in that the alkylene oxide chains in the compounds of US App '702 are shorter than those which are presently recited.

17. As to the triol moiety: Both glycerol and trimethylolpropane are known in the art for making hydrophilic crosslinking agents (see, for example, US Patent 5,576,407, col 5 lines 11 and 14). A person of ordinary skill would know that both glycerol and trimethylolpropane may both be used to prepare hydrophilic crosslinking monomers, such as are presently recited. Therefore, it would have been obvious to a person of ordinary skill in the art to have substituted the glycerol moiety of the compounds claimed by US App '702 with a trimethylolpropane moiety, as is presently recited.

18. As to the alkylene oxide chain length: A person of ordinary skill would know that alkylene oxide chains are hydrophilic, and that the length of the alkylene oxide chain would affect the hydrophilicity of the resulting alkoxylated crosslinking compounds and of the resulting crosslinked polymers. Therefore, it would have been obvious to a person of ordinary skill in the art to have modified the alkylene oxide chain length of the compounds claimed by US App '702, including a length within the scope of the present claims, to achieve a desired hydrophilicity.

19. As to the mixture of compounds: It is well settled that it is prima facie obvious to combine two ingredients, each of which is targeted by the prior art to be useful for the same purpose. In re Lindner 457 F.2d 506,509, 173 USPQ 356, 359 (CCPA 1972).

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Also, case law holds that “it is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art.” In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the present invention to have combined any of the compounds which are suggested by US App ‘702, thereby arriving at the presently claimed invention.

20. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

21. Claims 1-10 and 29-33 are directed to an invention not patentably distinct from claims 1, 4-7, 10-16, 18, 21-23, 26-27, 29-30, and 32-34 of commonly assigned copending Application No. 10/516702. Specifically, see paragraphs 12-14 above.

22. The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned copending Application No. 10/516702, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions

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were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

23. A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

24. Obviousness-type double patenting rejection #2:

25. Claims 1-10 and 29-33 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-21, 24-26, 28, and 31-42 of copending Application No. 10/551605. Although the conflicting claims are not identical, they are not patentably distinct from each other. US App '605 claims mixtures of alkoxyated triol compounds which are according to the instant formulas (see, for example, claim 10). US App '605 further specifically claims (see claim 11) ethylene oxide and propylene oxide as the alkylene units, such as are recited for instant formulas 1b and 1c. US App '605 fails to specifically claim blocks of the ethylene oxide and propylene oxide units, as is presently recited for formulas 1b and 1c. However, in view of US App '605's recognition that both ethylene oxide and propylene oxide may be used for the alkylene oxide units, a person of ordinary skill would know that the alkylene oxide units may be arranged in a block pattern. Therefore, it would have been obvious to a person of ordinary skill in the art to have made propylene oxide and ethylene oxide

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blocks for the compounds of US App '605, thereby arriving at the presently claimed invention.

26. Claims 1-10 and 29-33 are directed to an invention not patentably distinct from claims 1-21, 24-26, 28, and 31-42 of commonly assigned copending Application No. 10/551605. Specifically, see paragraph 20 above.

27. The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned copending Application No. 10/551605, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

28. A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

29. Obviousness-type double patenting rejection #3:

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30. Claims 1-10 and 29-33 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-31 of U.S. Patent No. 7,199,211. Although the conflicting claims are not identical, they are not patentably distinct from each other. US Pat '211 claims alkoxylated trimethylolpropane acrylates which are according to the instant claims (see claim 1, for example). US Pat '211 fails to claim mixtures of the compounds. However, it is well settled that it is *prima facie* obvious to combine two ingredients, each of which is targeted by the prior art to be useful for the same purpose. In *re Lindner* 457 F.2d 506,509, 173 USPQ 356, 359 (CCPA 1972). Also, case law holds that "it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." In *re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). Therefore, it would have been obvious to a person of ordinary skill in the art to have combined two of the alkoxylated trimethylolpropane acrylates claimed by US Pat '211, thereby arriving at the presently claimed invention.

31. Claims 1-10 and 29-33 are directed to an invention not patentably distinct from claims 1-31 of commonly assigned U.S. Patent No. 7,199,211. Specifically, see paragraph 25 above.

32. The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned U.S. Patent No. 7,199,211, discussed above,

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would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

33. A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

34. Obviousness-type double patenting rejection #4:

35. Claims 1-10 and 29-33 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-30 of U.S. Patent No. 7,250,481. Although the conflicting claims are not identical, they are not patentably distinct from each other. US Pat '481 claims alkoxylated trimethylolpropane acrylates (see claims 1, 6, and 7, for example), and further claims mixtures of these compounds (see "at least one polyalcohol" in claim 1). US Pat '481 fails to specifically claim the presently named compounds. However, US Pat '481 discloses that these compounds are suitable polyalcohols for the claimed invention (see the structures in col 9 lines 1-15). Therefore, it would have been obvious to a person of ordinary skill to have used the

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presently claimed monomers for the process of US Pat '481, thereby arriving at the presently recited mixture of alkoxylated trimethylolpropane acrylates.

36. Case law holds that those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in an application defines an obvious variation of an invention claimed in the patent. *In re Vogel*, 422 F.2d 438, 164 USPQ 619,622 (CCPA 1970).

37. Claims 1-10 and 29-33 are directed to an invention not patentably distinct from claims 1-30 of commonly assigned U.S. Patent No. 7,250,481. Specifically, see paragraph 30 above.

38. The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned U.S. Patent No. 7,250,481, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

39. A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon

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the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

40. Obviousness-type double patenting rejection #5:

41. Claims 1-10 and 29-33 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-27 of U.S. Patent No. 7,259,212. Although the conflicting claims are not identical, they are not patentably distinct from each other. US Pat '212 claims alkoxyated trimethylolpropane acrylates (see claim 1, for example). US Pat '212 fails to claim the presently recited compounds according to instant formula 1b, in which the acrylate is bonded to a propylene oxide block. US Pat '212 further fails to claim mixtures of the compounds.

42. As to the alkylene oxide blocks: US Pat '212 claims and discloses the analogous compounds in which the acrylate is bonded to the ethylene oxide block (see the structure in claim 1), that is, compounds of the form (triol)-(PO)-(EO)-(acrylate). It is within the ordinary level of skill in the art to change the order of blocks in a block copolymer. A person of ordinary skill would know that the ethylene oxide block and propylene oxide block could be interchanged, thereby resulting in the presently recited compounds of formula 1b. Therefore, it would have been obvious to a person of ordinary skill in the art to have made the compounds analogous to those of US Pat '212 of the form (triol)-(EO)-(PO)-(acrylate), thereby arriving at the presently recited compounds of formula 1b.

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43. As to the mixture: It is well settled that it is prima facie obvious to combine two ingredients, each of which is targeted by the prior art to be useful for the same purpose. In re Lindner 457 F.2d 506,509, 173 USPQ 356, 359 (CCPA 1972). Also, case law holds that "it is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). Therefore, it would have been obvious to a person of ordinary skill in the art to have combined two of the alkoxylated trimethylolpropane acrylates of US Pat '212, including the analogous compound discussed above in which the propylene oxide and ethylene oxide blocks are swapped, thereby arriving at the presently claimed invention.

44. Claims 1-10 and 29-33 are directed to an invention not patentably distinct from claims 1-27 of commonly assigned U.S. Patent No. 7,259,212. Specifically, see paragraphs 35-37 above.

45. The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned U.S. Patent No. 7,259,212, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can,

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under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

46. A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

Claim Rejections - 35 USC § 103

47. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

48. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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49. Claims 1-10 and 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 93/021237 (herein "Gartner"). Gartner was cited on the Information Disclosure Statement filed by Applicant on 27 July 2006.

50. As to claim 1: Gartner discloses alkoxyated (see page 5 line 28) (meth)acrylic esters (see page 5 lines 8-9) of trimethylol propane (see page 5 line 28). Gartner further discloses that the alkylene oxide units may be derived from ethylene oxide, propylene oxide, or butylene oxide (see page 5 line 29), as is recited for instant formula 1a. Gartner further discloses that the alkylene oxide units may be arranged in block patterns, as is recited for instant formulas 1b and 1c.

51. Gartner fails to specifically name the presently recited compounds in which the sum of the number of alkylene oxide units is 28-75 as is recited for instant formula 1a, or in which the sum of the number of ethylene oxide units is 28-60 and the sum of the number of propylene oxide units is 4-13 as is recited for instant formulas 1b and 1c. Gartner further fails to specifically name a mixture of these compounds.

52. As to the number of alkylene oxide units: However, a person of ordinary skill in the art would know that the number of alkylene oxide units in a polymer is related to the hydrophilicity of the polymer. Furthermore, Gartner teaches that the number of alkylene oxide units is related to the hydrophilicity of the polymer. For example, Table 1 demonstrates (see columns 2-3 and 7 of Table 1 on page 17) that increasing the number of alkylene oxide units in the crosslinking compound increases the water-absorbing capacity of the polymer. In view of this, a person of ordinary skill would be

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motivated to select an appropriate length of alkylene oxide units to achieve desired water-absorbing capacity.

53. It is the examiner's position that the number of alkylene oxide units is a result effective variable because changing it will clearly affect the type of product obtained, including the resulting crosslinking compound's hydrophilicity. See MPEP § 2144.05 (B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In view of this, it would have been obvious to one of ordinary skill in the art to have utilized an appropriate number of alkylene oxide units for the compounds for Gartner, including those within the scope of the present claims, so as to produce desired end results, including the compound's hydrophilicity.

54. As to the mixture: It is noted that the instant invention is drawn to the same purpose as Gartner, namely hydrogels (see Gartner page 9 line 26; and the instant specification, page 9 line 17). It is well settled that it is *prima facie* obvious to combine two ingredients, each of which is targeted by the prior art to be useful for the same purpose. *In re Lindner* 457 F.2d 506, 509, 173 USPQ 356, 359 (CCPA 1972). Also, case law holds that "it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the

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present invention to have combined any of the compounds which are suggested by Gartner, thereby arriving at the presently claimed invention.

55. As to claim 2: As set forth above in paragraph 50, Gartner discloses that the alkylene oxide units may be derived from ethylene oxide, propylene oxide, or butylene oxide.

56. As to claim 3: As set forth above in paragraph 54, it would have been obvious to a person of ordinary skill in the art to have combined any of the crosslinking compounds which are suggested by Gartner. Because Gartner suggests compounds according to instant formulas 1a, 1b, and 1c, it therefore would have been obvious to a person of ordinary skill in the art to have combined compounds according to formulas 1a and 1b, or of formulas 1a and 1c, or of formulas 1b and 1c, thereby arriving at the presently claimed invention.

57. As to claim 4: Gartner fails to specifically name a mixture of the compounds according to instant formulas 1b and 1c, including the percentage by weight composition of such a mixture. However, as set forth above in paragraph 50, it would have been obvious to a person of ordinary skill in the art to have combined any of the crosslinking compounds which are suggested by Gartner. In view of this, a person of ordinary skill would have been motivated to combine the (propylene oxide)-b-(ethylene-oxide) compounds which are suggested by Gartner, corresponding to the compounds of instant formulas 1b and 1c.

58. Furthermore, a person of ordinary skill would further have been motivated to adjust the relative amounts of the crosslinking compounds in order to achieve a desired

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hydrophilicity of the resulting crosslinked polymers. Alternatively, when faced with a mixture, one of ordinary skill in the art would be motivated by common sense to select a 1:1 ratio, a ratio that falls within the presently claimed amount. Case law holds that "[h]aving established that this knowledge was in the art, the examiner could then properly rely... on a conclusion of obviousness, 'from common knowledge and common sense of the person of ordinary skill in the art within any specific hint or suggestion in a particular reference.'" *In re Bozek*, 416 F.2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the present invention to have used an appropriate amount of the crosslinking compounds, including a mixture with 50 % by weight of the (propylene oxide)-b-(ethylene-oxide) compounds which are suggested by Gartner, thereby arriving at the presently claimed invention.

59. As to claims 5-9: As set forth above in paragraph 51, Gartner fails to specifically name the presently recited compounds which have the presently recited number of alkylene oxide units. However, as set forth in paragraphs 52-53, it would have been obvious to one of ordinary skill in the art to have utilized an appropriate number of alkylene oxide units for the compounds for Gartner, including those within the scope of the present claims, so as to produce desired end results, including the compound's hydrophilicity.

60. As to claim 10: As set forth above in paragraph 50, Gartner discloses (meth)acrylic esters (see both acrylic acid and methacrylic acid on page 5 line 16).

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Gartner further discloses compounds in which the ester compounds have identical acrylic termini (see "triacylate" at page 22 line 8, for example).

61. As to claim 29: As set forth above in paragraph 50, Gartner discloses alkoxyated (meth)acrylic esters of trimethylol propane in which the alkylene oxide units may be derived from ethylene oxide.

62. As to claim 30: As set forth above in paragraph 54, it would have been obvious to a person of ordinary skill in the art to have combined any of the crosslinking compounds which are suggested by Gartner. Because Gartner suggests compounds according to instant formulas 1a, 1b, and 1c, it therefore would have been obvious to a person of ordinary skill in the art to have combined compounds according to formulas 1b and 1c, thereby arriving at the presently claimed invention.

63. As to claims 31-32: Gartner fails to specifically name a mixture of the compounds according to instant formulas 1b and 1c, including the percentage by weight composition of such a mixture. However, as set forth above in paragraph 54, it would have been obvious to a person of ordinary skill in the art to have combined any of the crosslinking compounds which are suggested by Gartner. In view of this, a person of ordinary skill would have been motivated to combine the (propylene oxide)-b-(ethylene-oxide) compounds which are suggested by Gartner, corresponding to the compounds of instant formulas 1b and 1c.

64. Furthermore, a person of ordinary skill would further have been motivated to adjust the relative amounts of the crosslinking compounds in order to achieve a desired hydrophilicity of the resulting crosslinked polymers. For example, when faced with a

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mixture, one of ordinary skill in the art would be motivated by common sense to select a 1:1 ratio, a ratio that falls within the presently claimed amount. Case law holds that "[h]aving established that this knowledge was in the art, the examiner could then properly rely... on a conclusion of obviousness, 'from common knowledge and common sense of the person of ordinary skill in the art within any specific hint or suggestion in a particular reference.'" *In re Bozek*, 416 F.2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the present invention to have used an appropriate amount of the crosslinking compounds, including a mixture with 50 % by weight of the (propylene oxide)-b-(ethylene-oxide) compounds which are suggested by Gartner, thereby arriving at the presently claimed invention.

65. As to claim 33: As set forth above in paragraphs 50 and 60, Gartner discloses (meth)acrylic esters, and further discloses compounds in which the ester compounds have identical acrylic termini, corresponding to instant groups $R_1=R_2=R_3=H$.

Claim Rejections - 35 USC § 103

66. Claims are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,350,877 (herein "Ritter") in view of Gartner.

67. The discussion with respect to Gartner as set forth above in paragraphs 50-65 incorporated here by reference.

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68. As to claim 1: Ritter discloses alkoxyated (see col 3 line 34) (meth)acrylic esters (see col 3 line 18) of trimethylol propane (see col 3 lines 30-31). Ritter further discloses that the alkylene oxide units may be derived from ethylene oxide or propylene oxide (see col 3 lines 36-37), as is recited for the instant formulas 1a, 1b, and 1c. Ritter further discloses that the ester compounds may have up to 50 alkylene oxide units per alcohol unit of the polyalcohol (see col 3 line 40). For example, such a compound with 20 alkylene oxide units per alcohol unit of the polyalcohol would correspond to $p_1+p_2+p_3=60$ as is presently recited for instant formula 1a.

69. Although Ritter discloses that the alkylene oxide units may be derived from ethylene oxide or propylene oxide, Ritter fails to specifically disclose that the alkylene oxide units may be arranged in block patterns, as is recited for instant formulas 1b and 1c. Ritter further fails to specifically disclose a mixture of these ester compounds.

70. As to the alkylene oxide blocks: As set forth above in paragraph 50, Gartner discloses that alkoxyated (meth)acrylic esters of trimethylol propane may be made with blocks of propylene oxide and ethylene oxide. In view of this, a person of ordinary skill would know that the analogous compounds of Ritter could be made with blocks of propylene oxide and ethylene oxide, as is presently recited in instant formulas 1b and 1c. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the present invention to have made the ester compounds of Ritter using blocks of ethylene oxide and propylene oxide, as is recited for formulas 1b and 1c.

71. As to the specific number of propylene oxide and ethylene oxide units: Because Ritter fails to specifically name blocks of propylene oxide and ethylene oxide, Ritter fails

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to specifically name the presently recited quantities m and n , corresponding to the number of ethylene oxide and propylene oxide units in each block. However, as set forth above, Ritter discloses that the ester compounds may have up to 50 alkylene oxide units per alcohol unit of the polyalcohol. Therefore, a person of ordinary skill would be motivated to choose an appropriate number of each of the ethylene oxide and propylene oxide units in order to achieve desired hydrophilicity.

72. It is the examiner's position that the number of alkylene oxide units is a result effective variable because changing it will clearly affect the type of product obtained, including the resulting crosslinking compound's hydrophilicity. See MPEP § 2144.05 (B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In view of this, it would have been obvious to one of ordinary skill in the art to have utilized an appropriate number of alkylene oxide units for the blocks of alkylene oxide units in the compounds suggested by Ritter and Gartner, including a number of units within the scope of the present claims, so as to produce desired end results, including the compound's hydrophilicity.

73. As to the mixture of compounds: It is well settled that it is *prima facie* obvious to combine two ingredients, each of which is targeted by the prior art to be useful for the same purpose. *In re Lindner* 457 F.2d 506, 509, 173 USPQ 356, 359 (CCPA 1972). Also, case law holds that "it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them

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flows logically from their having been individually taught in the prior art.” In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the present invention to have combined any of the compounds which are suggested by Ritter and Gartner, thereby arriving at the presently claimed invention.

74. As to claim 2: As set forth above in paragraph 68, Ritter discloses that the alkylene oxide units may be derived from ethylene oxide or propylene oxide.

75. As to claim 3: As set forth above in paragraph 73, it would have been obvious to a person of ordinary skill in the art to have combined any of the crosslinking compounds which are suggested by Ritter and Gartner. Because Ritter and Gartner suggest compounds according to instant formulas 1a, 1b, and 1c, it therefore would have been obvious to a person of ordinary skill in the art to have combined compounds according to formulas 1a and 1b, or of formulas 1a and 1c, or of formulas 1b and 1c, thereby arriving at the presently claimed invention.

76. As to claim 4: Ritter and Gartner fail to specifically name a mixture of the compounds according to instant formulas 1b and 1c, including the percentage by weight composition of such a mixture. However, as set forth above in paragraph 73, it would have been obvious to a person of ordinary skill in the art to have combined any of the crosslinking compounds which are suggested by Ritter and Gartner. In view of this, a person of ordinary skill would have been motivated to combine the (propylene oxide)-b-

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(ethylene-oxide) compounds which are suggested by Ritter and Gartner, corresponding to the compounds of instant formulas 1b and 1c.

77. Furthermore, a person of ordinary skill would further have been motivated to adjust the relative amounts of the crosslinking compounds in order to achieve a desired hydrophilicity of the resulting crosslinked polymers. Alternatively, when faced with a mixture, one of ordinary skill in the art would be motivated by common sense to select a 1:1 ratio, a ratio that falls within the presently claimed amount. Case law holds that "[h]aving established that this knowledge was in the art, the examiner could then properly rely... on a conclusion of obviousness, 'from common knowledge and common sense of the person of ordinary skill in the art within any specific hint or suggestion in a particular reference.'" *In re Bozek*, 416 F.2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the present invention to have used an appropriate amount of the crosslinking compounds, including a mixture with 50 % by weight of the (propylene oxide)-b-(ethylene-oxide) compounds which are suggested by Ritter and Gartner, thereby arriving at the presently claimed invention.

78. As to claim 5: As set forth above in paragraph 68, Ritter discloses that the ester compounds may have up to 50 alkylene oxide units per alcohol unit of the polyalcohol. Such a compound with 10 alkylene oxide units per alcohol unit of the polyalcohol would correspond to $p_1 + p_2 + p_3 = 30$ as is presently recited for instant formula 1a.

79. As to claims 6-9: As set forth above in paragraph 71, because Ritter fails to specifically name blocks of propylene oxide and ethylene oxide, Ritter also fails to

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specifically name the presently recited quantities m and n , corresponding to the number of ethylene oxide and propylene oxide units in each block. However, as set forth in paragraphs 72, it would have been obvious to one of ordinary skill in the art to have utilized an appropriate number of alkylene oxide units for the compounds suggested by Ritter and Gartner, including those within the scope of the present claims, so as to produce desired end results, including the compound's hydrophilicity.

80. As to claim 10: Ritter discloses ester compounds in which the only unsaturated ester is acrylic acid (see Example 5 in col 6), corresponding to $R_1=R_2=R_3=H$.

81. As to claim 29: As set forth above in paragraph 68, Ritter discloses that the alkylene oxide units may be derived from ethylene oxide.

82. As to claim 30: As set forth above in paragraph 73 and 75, it would have been obvious to a person of ordinary skill in the art to have combined any of the crosslinking compounds which are suggested by Ritter and Gartner. Because Ritter and Gartner suggest compounds according to instant formulas 1a, 1b, and 1c, it therefore would have been obvious to a person of ordinary skill in the art to have combined compounds according to formulas 1b and 1c, thereby arriving at the presently claimed invention.

83. As to claims 31-32: Ritter and Gartner fail to specifically name a mixture of the compounds according to instant formulas 1b and 1c, including the percentage by weight composition of such a mixture. However, as set forth above in paragraph 73, it would have been obvious to a person of ordinary skill in the art to have combined any of the crosslinking compounds which are suggested by Ritter and Gartner. In view of this, a person of ordinary skill would have been motivated to combine the (propylene oxide)-b-

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(ethylene-oxide) compounds which are suggested by Ritter and Gartner, corresponding to the compounds of instant formulas 1b and 1c.

84. Furthermore, a person of ordinary skill would further have been motivated to adjust the relative amounts of the crosslinking compounds in order to achieve a desired hydrophilicity of the resulting crosslinked polymers. Alternatively, when faced with a mixture, one of ordinary skill in the art would be motivated by common sense to select a 1:1 ratio, a ratio that falls within the presently claimed amount. Case law holds that "[h]aving established that this knowledge was in the art, the examiner could then properly rely... on a conclusion of obviousness, 'from common knowledge and common sense of the person of ordinary skill in the art within any specific hint or suggestion in a particular reference.'" *In re Bozek*, 416 F.2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the present invention to have used an appropriate amount of the crosslinking compounds, including a mixture with 50 % by weight of the (propylene oxide)-b-(ethylene-oxide) compounds which are suggested by Ritter and Gartner, thereby arriving at the presently claimed invention.

85. As to claim 33: As set forth above in paragraphs 68 and 80, Gartner discloses (meth)acrylic esters, and further discloses compounds in which the ester compounds have identical acrylic termini, corresponding to instant groups $R1=R2=R3=H$.

Claim Rejections - 35 USC § 103

86. Claims 1-10 and 29-33 are provisionally rejected under 35 U.S.C. 103(a) as being obvious over copending Application No. 10/516702 which has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the copending application, it would constitute prior art under 35 U.S.C. 102(e) if published or patented. This provisional rejection under 35 U.S.C. 103(a) is based upon a presumption of future publication or patenting of the conflicting application.

87. US App '702 claims glycerol tri(meth)acrylates which are structurally similar to the presently recited trimethylolpropane tri(meth)acrylates (see claim 7, for example). The compounds of US App '702 differ from the presently recited compounds in that the present compounds have an ethyl group on the triol moiety, and in that the alkylene oxide chains in the compounds of US App '702 are shorter than those which are presently recited.

88. As to the triol moiety: Both glycerol and trimethylolpropane are known in the art for making hydrophilic crosslinking agents (see, for example, US Patent 5,576,407, col 5 lines 11 and 14). A person of ordinary skill would know that both glycerol and trimethylolpropane may both be used to prepare hydrophilic crosslinking monomers, such as are presently recited. Therefore, it would have been obvious to a person of ordinary skill in the art to have substituted the glycerol moiety of the compounds claimed by US App '702 with a trimethylolpropane moiety, as is presently recited.

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89. As to the alkylene oxide chain length: A person of ordinary skill would know that alkylene oxide chains are hydrophilic, and that the length of the alkylene oxide chain would affect the hydrophilicity of the resulting alkoxylated crosslinking compounds and of the resulting crosslinked polymers. Therefore, it would have been obvious to a person of ordinary skill in the art to have modified the alkylene oxide chain length of the compounds claimed by US App '702, including a length within the scope of the present claims, to achieve a desired hydrophilicity.

90. As to the mixture of compounds: It is well settled that it is prima facie obvious to combine two ingredients, each of which is targeted by the prior art to be useful for the same purpose. In re Lindner 457 F.2d 506,509, 173 USPQ 356, 359 (CCPA 1972). Also, case law holds that "it is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the present invention to have combined any of the compounds which are suggested by US App '702, thereby arriving at the presently claimed invention.

91. This provisional rejection might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the copending application was derived from the inventor of this application and is thus not the invention "by another," or by a showing of a date of invention for the instant application prior to the effective U.S.

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filing date of the copending application under 37 CFR 1.131. This rejection might also be overcome by showing that the copending application is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

92. Claims 1-10 and 29-33 are provisionally rejected under 35 U.S.C. 103(a) as being obvious over copending Application No. 10/551605 which has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the copending application, it would constitute prior art under 35 U.S.C. 102(e) if published or patented. This provisional rejection under 35 U.S.C. 103(a) is based upon a presumption of future publication or patenting of the conflicting application.

93. US App '605 claims mixtures of alkoxylated triol compounds which are according to the instant formulas (see, for example, claim 10). US App '605 further specifically claims (see claim 11) ethylene oxide and propylene oxide as the alkylene units, such as are recited for instant formulas 1b and 1c. US App '605 fails to specifically claim blocks of the ethylene oxide and propylene oxide units, as is presently recited for formulas 1b and 1c. However, in view of US App '605's recognition that both ethylene oxide and propylene oxide may be used for the alkylene oxide units, a person of ordinary skill would know that the alkylene oxide units may be arranged in a block pattern. Therefore, it would have been obvious to a person of ordinary skill in the art to have made propylene oxide and ethylene oxide blocks for the compounds of US App '605, thereby arriving at the presently claimed invention.

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94. This provisional rejection might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the copending application was derived from the inventor of this application and is thus not the invention "by another," or by a showing of a date of invention for the instant application prior to the effective U.S. filing date of the copending application under 37 CFR 1.131. This rejection might also be overcome by showing that the copending application is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RICHARD A. HUHN whose telephone number is (571) 270-7345. The examiner can normally be reached on Monday to Friday, 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/R. A. H./
Examiner, Art Unit 1796

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796